WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Ofcom – Fixed Wireless Spectrum Strategy

Proposed next steps to enable future uses of fixed wireless links

Summary

Western Power Distribution (WPD) welcomes the opportunity to respond to this consultation.

WPD welcomes Ofcom's understanding that *'Energy distribution along with all the necessary communications and network management, monitoring and control functions all require high reliability communications infrastructures. A change to a more distributed model could result in additional requirements for fixed wireless links, which we [Ofcom] will monitor'*.

WPD also welcomes Ofcom's recognition that access to suitable spectrum enables *'the safe and secure supply of water, **electricity** and gas in the UK'*, therefore WPD strongly believes there is a necessity for Ofcom to work more closely with the utility sector at this time and with our regulator (Ofgem) to determine UK utility industry spectrum needs for both current and future use to ensure that the UKs spectrum strategy continues to sufficiently support what has become critical infrastructure for the benefit of UKs social and economic existence. WPD would like to note that a distributed and active model is already "business as usual" and is rapidly growing with increasing active management services being connected to our electricity networks.

Background

WPD is a Distribution Network Operator (DNO), operating in the four regulated licence areas serving 7.8 million electricity connected customers in the Midlands, the South West of England and South Wales. However, as energy generation is becoming more distributed, our network is becoming smarter and more active, and, as a result, we are stepping towards being a Distribution System Operator (DSO) – transforming our operations for an increasingly low carbon, digital future.

In order for DNOs to maintain a reliable and secure electricity supply as they transition to DSOs, reliable, resilient and complete coverage communications need to be maintained and expanded upon for critical functions.

WPD's primary focus will remain unchanged, distributing and proactively managing reliable electricity to its 7.8 million customers – not just through day to day normal operation, but also during events such as severe weather, flu-pandemics, Blackstart and acts of terrorism. To do this, and adapt to a low carbon future, DSOs will require more sensors, and hence more data and a mix of resilient data infrastructures.

WPD is in a unique position among the DNOs of having our own in house telecoms expertise in our own telecommunications department. WPD has a network using fibre and fixed wireless links to provide a backhaul / trunk network to its office sites and communication sites which are then used to communicate to substation sites and field staff. In the future, these sites will need to communicate to the thousands of additional users of the smart grid and all its components.

Increasingly WPD's data infrastructure is required to be extended to provide private connectivity to substations, distributed generation and active management systems because existing commercial

networks are unable to provide the coverage, the resilience and the connectivity that is required and can be technically unsuitable. For example, as a result of the recent migration from BT private wire circuits on the BT21CN projects, WPD had to install many fixed wireless links, many at 26GHz, to replace the BT private wire service.

Ultimately, WPD has major concerns for the future of spectrum. In the move towards 5G, the pressure on spectrum allocation will impact on our current spectrum use without any alternative at present. Indeed, we currently use spectrum in the following ways:

- 26GHz and other fixed wireless link frequencies is used for microwave communications for substation comms including electricity circuit protection.
- 450-470 MHz is used for scanning telemetry frequencies, which will see increased volumes of data traffic communicating with our Control Centres from our operational assets with no additional allocation presently for utilities.
- 400-430 MHz, we currently have a development licence from the Ministry of Defence for an LTE trial, we cannot move this to business as usual as it is a temporary licence.
- WPD currently relies upon spectrum for our private systems to support us not only for day to day operation but also for high impact low probability events e.g. Blackstart.
- The evolution towards operating a more active system as a DSO will require an increase in the numbers of communications devices connected, and therefore an increase in data and secure, resilient data infrastructure.
    - It is our current opinion that the Internet of Things or public networks or even proposed 5G will not address our cyber security, connectivity and resilience concerns.

Question 1:

Do you agree that we have identified the key drivers likely to have significant impact on the spectrum demand for fixed wireless links? If not, please provide further detail and evidence to support your answer.

Response

WPD agrees in principle. However, we are concerned with Ofcom's continuous removal of fixed link frequencies for 5G and now we perceive further reductions in the number of fixed link licences available to the energy industry; as our active electricity system is growing, we are reliant on these fixed links to ensure we can maintain and grow a cost effective and resilient communication system to manage the electricity network. Nb. There is no resilient alternative to using fixed links technology at present.

Question 2:

Do you agree with our conclusions on spectrum implications and our proposed strategy/next steps for each band? Are there any other considerations of significance that you feel we should have included or do you have other comments to make/points to raise with us on these issues? Please provide as much detail as possible to support your answer.

Response

WPD has serious concerns over the 26 GHz band being made solely available to mobile service operators. We / the energy industry need to be engaged to future proof our requirements and or explore spectrum sharing i.e. co-existence within the band.

Note:

1. The electricity sector uses spectrum between 20 – 45 GHz. 23, 26, 38 GHz, often used for a large number of embedded generation sites i.e. Wind and solar farms.
2. These fixed links provide WPD with a cost effective and resilient solution that has already replaced BT private wire due to the BT21CN project; the current proposal will result in further impact with no resilient alternative available at present.

Question 3:

Do you agree with the items we've identified for further consideration? Are there any other significant areas that you believe should be included? If so, please include all necessary evidence to support your view.

Response

WPD's movement to DSO already requires additional spectrum to support the rising number of active components within a distributed and active electricity network. The rise in the number of active components and therefore the associated data will increase exponentially and will become increasingly critical to maintain a reliable electricity supply to connected customers and smart cities.

WPD therefore agrees that energy distribution – along with all the necessary communications and network management, monitoring and control functions – all require high reliability communications infrastructures. Reliable to the energy industry however also means resilient to power failure. As the energy industry moves to a distributed model we **will** and **do** require more fixed wireless links.

Questions 4, 5, 6:

Response

No Comment.

Question 7:

Do you agree that there is a continued need for future low capacity fixed link applications? If so, please provide information to support your view and what alternatives you would consider appropriate should the upper 1.4 GHz band no longer be available. Please provide clear evidence to support the reasons for your views.

Response

WPD currently does not have any links in the 1.4 GHz band as we previously migrated onto the 26 GHz band due to the previous proposal to clear the 1.4 GHz band.

WPD strongly believes there is still a requirement for low capacity fixed link applications as the equipment for this is cost effective, easily deployable and therefore a suitable solution to renewable energy generation and potentially future requirements of smart grid and smart cities.

Question 8:

Do you consider there is merit in considering making the bands 52 GHz and 55 GHz available under alternative authorisation approaches such as block assignment? If so, what would you consider to be the best approach? Please provide detailed views to support your response.

Response

WPD would consider this band but only as an alternative to 38 GHz.

Question 9, 10, 11:

Response

No comment